

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-019474**Date Inspected:** 24-Jan-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	William Sherwood and Gary Ersham			CWI Present:	Yes	No	
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No	N/A
				Delayed / Cancelled:	Yes	No	N/A
Bridge No:	34-0006			Component:	Orthotropic Box Girder		

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 1W-PP10.5-W5-LS-W longitudinal stiffener inside, QA randomly observed ABF welder Hua Qiang Hwang perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding fill pass to cover pass on the stiffener splice butt joint. The stiffener plates being welded are made of high strength plate material HPS 485W and has a thickness of 30mm. The joint has a double V joint preparation that was welded from one side and after the completion from one side it was back gouged and Non Destructive Testing (NDT) tested using Magnetic Particle Testing (MT) and back welded to the other side. Prior welding, the fit up was inspected and accepted by ABF QC Gary Ersham. QA Danny Reyes also verified the fit up alignment. The welder was noted using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The joint being welded was root welded using a ceramic backing. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. The QA Inspector noted the ABF QC Gary Ersham was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, cover pass welding on both sides of the joint was completed.

At OBG 9W/10W edge plate 'B' outside, QA randomly observed ABF/JV qualified welder Jorge Lopez perform root pass welding on the CJP splice butt joint. The welder was observed manually welding in the 3G (vertical)

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position utilizing a SMAW with 1/8" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040B. The joint being welded has a single V-groove butt joint with copper backing bar. Prior welding, QA has noted ABF QC William Sherwood verifying the fit up alignment of the joint. According to QC, the alignment mismatch measured was 2.0mm or less. QA performed random verification on the mismatch measurement and came up same results. During welding, ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder. QA randomly monitored the welding parameter with reading of 130 amperes which appears in conformance to the contract requirements. At the end of the shift, SMAW root pass welding was still continuing and should remain tomorrow.

At OBG 1W-PP10.5-W2-N deck access hole to top deck plate inside, QA randomly observed ABF/JV qualified welder Jin Pei Wang perform CJP repair welding. The welder was noted welding in 4G (overhead) position utilizing SMAW with 1/8" diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1001 Repairs. The welding repairs were excavated to a boat shape profile and were tested with Magnetic Particle Testing (MT) prior welding. During welding, ABF QC Gary Ersham was noted monitoring the welder and his welding parameters. The locations of the repairs were noted below;

Location	Y-dimension	Length	Width	Depth	Remarks
1.	610mm	70mm	20mm	6mm	Excavated
2.	3535mm	120mm	20mm	8mm	Completed
3.	1940mm	170mm	22mm	9mm	Excavated

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC visual inspection of the CJP welding of the following Lifting Lug Holes (LLH); The QA verification was performed to verify that the welding and the visual weld inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the welds and the QC inspection complies with the contract documents.

1. 1W-PP11-W4 #1 to #4 – QA VT/MT verified
2. 1W-PP9.5-W4 #1 to #4 – QA VT/MT verified
3. 2W-PP15-W3 #1 to #3 – QA VT/MT verified
4. 2W-PP15-W4 #1 to #4 – QA VT/MT verified
5. 2W-PP17-W3 #3 & #4 – QA VT/MT verified
6. 2W-PP17-W4 #1 to #4 – QA VT/MT verified

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Summary of Conversations:

No significant conversation occurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Sang Le 916-764-5650, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer